A History of the M72 LAW and Current Improvement Programs

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Thoughts on M72

- Why is M72 so widely deployed?
- How has M72 maintained relevance for 40 years?
- Who can learn from the M72 technology strategy?
- What is the future vision for M72?

What is the LAW?

- Firepower for the individual warfighter
  - Light close-combat lethality for mobile Soldiers
  - Disposable rugged round of ammunition
  - Minimal training needed to effectively employ
  - Highly proliferable and low cost
- This concept has adapted to world changes
  - New threats have been addressed
  - Modern tactics have been embraced
  - Emerging technologies have been exploited
  - Light weight, compact size have been maintained

What is the LAW?

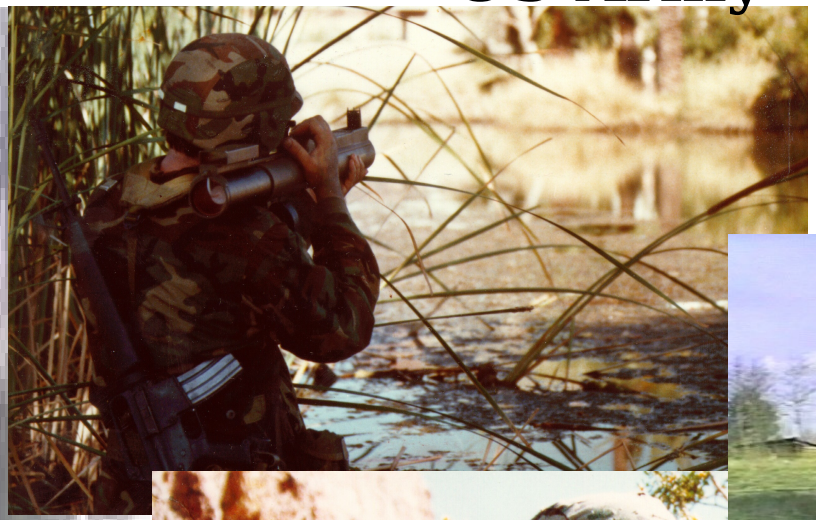
Improved M72A4, A5, A6/A7
(Current Production)

Next Generation M72E10-AP
(Under Development in US)

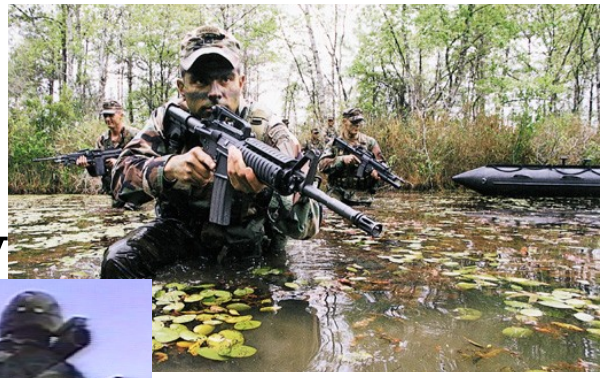
Next Generation M72E9-DP
(Under Development in US)

Who has fielded the LAW?

US Army



Norway



SOF

USMC

More than 20 other allied nations

Fielded in Afghanistan and

Why such wide deployment?

- M72 is not specialized for a single mission
  - Useful in a wide variety of combat scenarios
    - Enough armor penetration to defeat most threat AFVs
    - Enough explosive to be effective versus material targets
    - Enough range to provide effective standoff
  - Mobile enough to carry for contingencies
    - Carry weight and length don’t preclude other equipment
    - Multiple rounds can be carried by a single gunner
    - Ease of use allows for quick reaction
- M72 program is multi-national
  - Partnership between US and Norway
  - Talley, NAMMO, & NI cooperate to consider many potential user viewpoints

Mobility is Critical

- Carry weight is the major determinant
  - Soldiers are overloaded
  - Specialized equipment exists for every task

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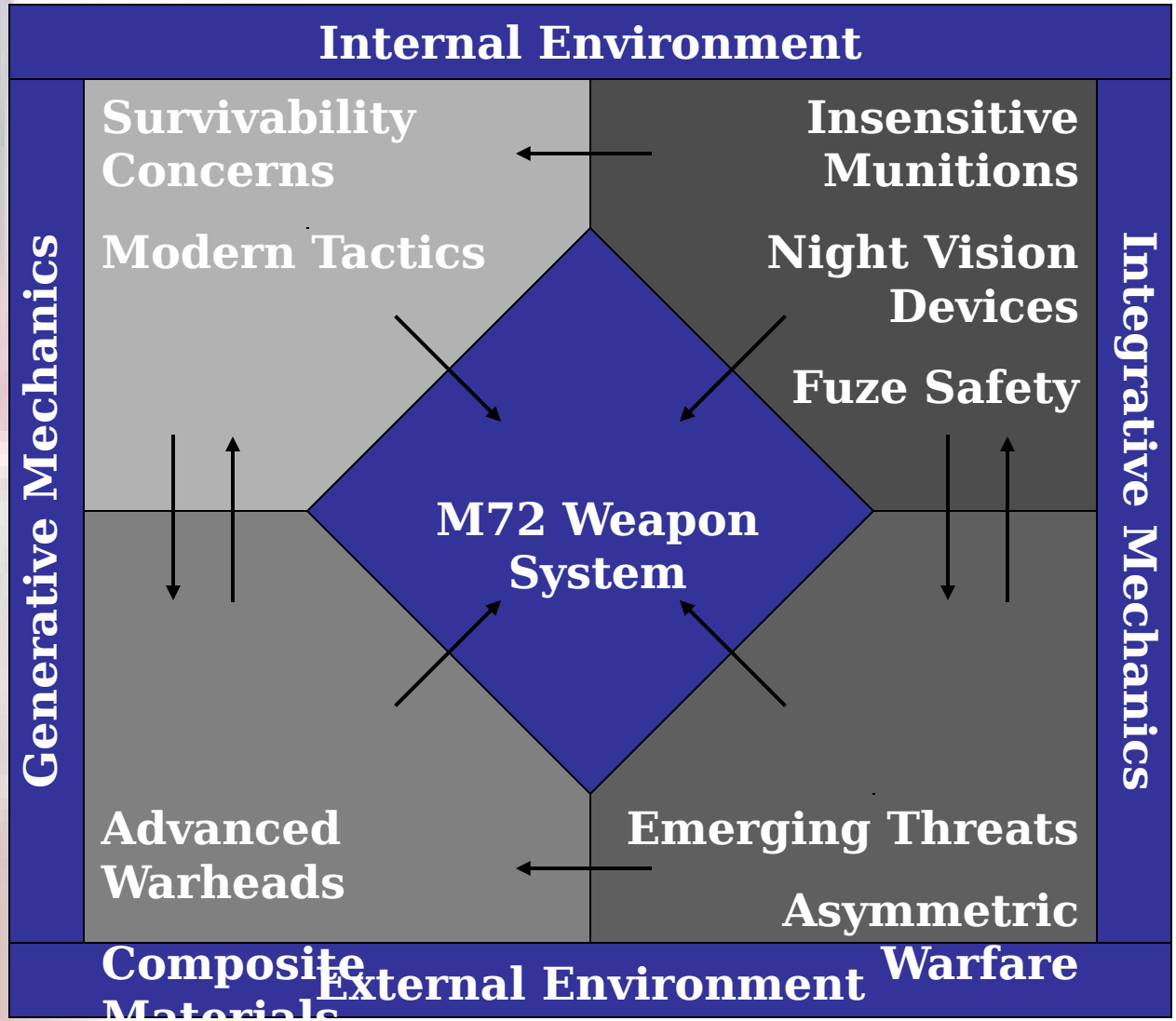
M72/A2	6 lb	26 in
M72A3/A7	8 lb	30.5 in
M72E8	9.5 lb	30.5 in
M72E9/E10	8/9 lb	30.5 in
AT4	15 lb	39.3 in
AT4CS	17 lb	41 in
SMAW-D	16 lb	32 in

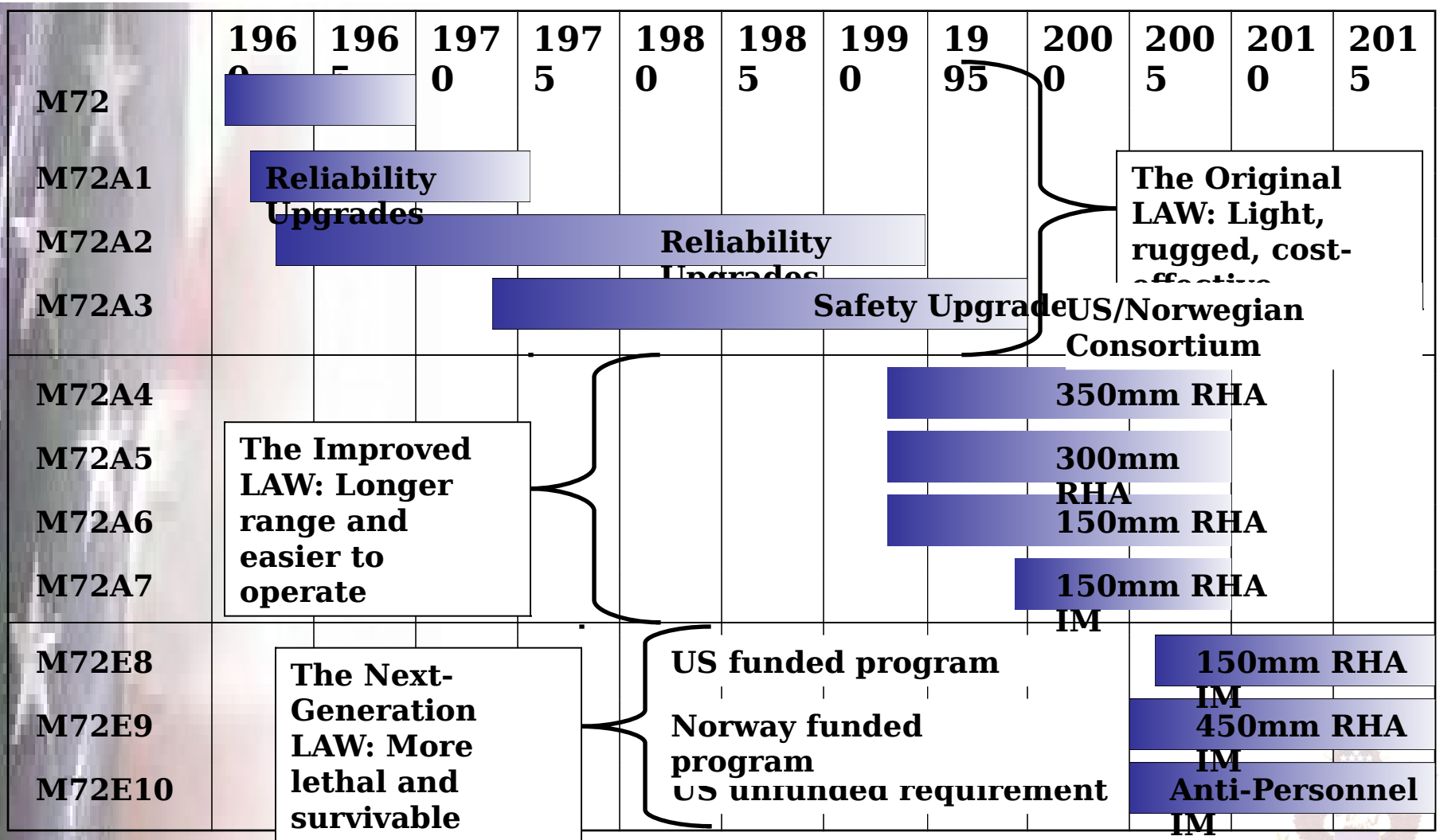
How has it stayed relevant?

- M72 has a responsive technology strategy
  - Internal user demands (concerns, tactics changes)
    - Generate M72 specific technology development
  - External technology maturation (advancements)
    - Generates opportunities for M72 specific improvements
  - Internal acquisition reforms (requirements)
    - Require integration of non M72 specific technologies
  - Changes in external combat environment (threats)
    - Suggest integration of unforeseen capabilities and adaptation to new missions

Technology Determinants



Evolutionary Overview



Technology Evolutions

- M72 to M72A1 & A2
  - Reliability upgrades developed to address User needs, improve manufacturing processes
- M72A2 to M72A3
  - Safety upgrades integrated to respond to acquisition changes, production shift to Norway
- M72A3 to M72A4, A5, A6
  - Gunner interfaces, lethality, and range upgraded for changing User needs
  - A6 warhead integrated for new SOF mission
- M72A6 to A7
  - IM sensitivity upgrades integrated to address regulatory changes and increase safety

Who can learn from M72?

- Many DoD programs can learn something
  - Modern pace of technology and threat changes, coupled with tight budgets, demand it
- Lessons learned are:
  - Evolutionary path ensures program longevity
    - Flexibility critical to meet needs, even change missions
  - Map and track the programs technology drivers
    - Identify emerging needs & develop matching technology
    - Anticipate emerging threats and integrate counters
  - International partnerships foster improvement
    - Alternative viewpoints considered
    - Larger User base ensures unbroken series of steps

Future Vision For the M72

- Fire From Enclosure (FFE) propulsion (M72E8)
  - Technology generated so M72 can rule MOUT combat
- Deep Penetrator (DP) warhead (M72E9)
  - Technology integrated to improve M72 vs threat armor
- Anti-Personnel (AP) warhead (M72E10)
  - Technology generated to evolve M72 to a new mission
- On-axis trigger firing mechanism (All)
  - Technology generated in response to User request
- Dual-safe fuze (All)
  - Technology integrated to improve safety for soldiers and in storage and transportation

M72E8-FFE

- Adds Fire From Enclosure (FFE)
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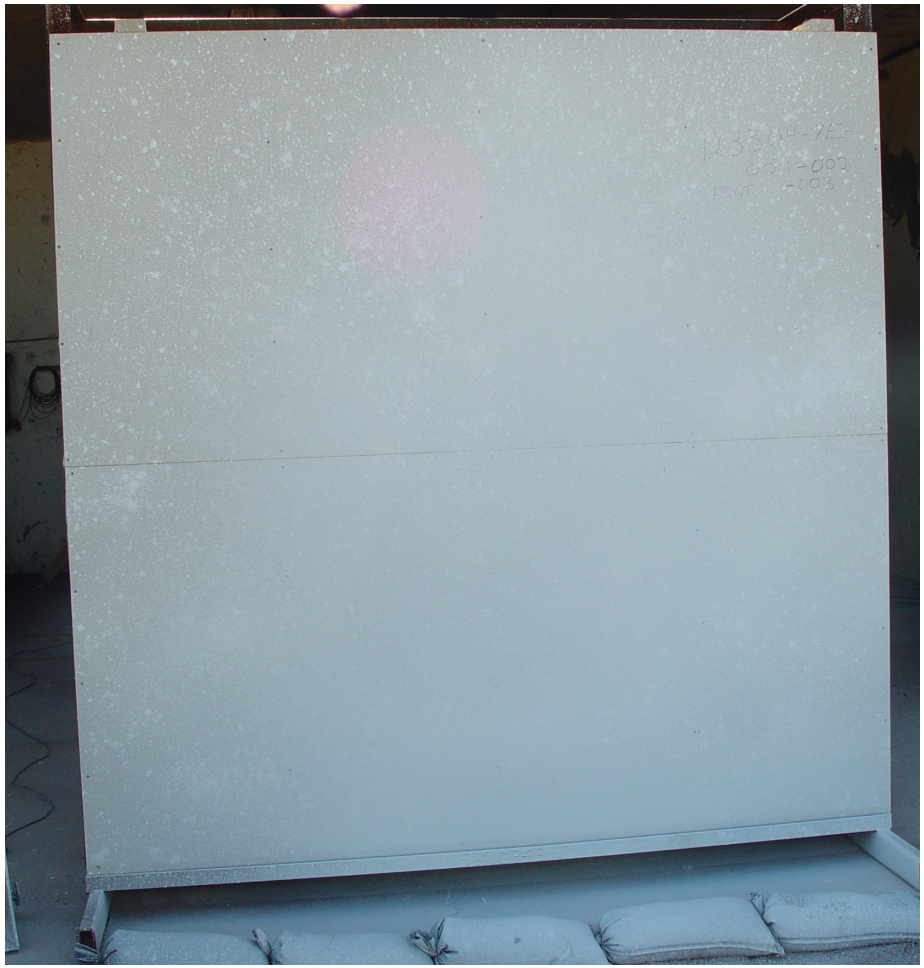
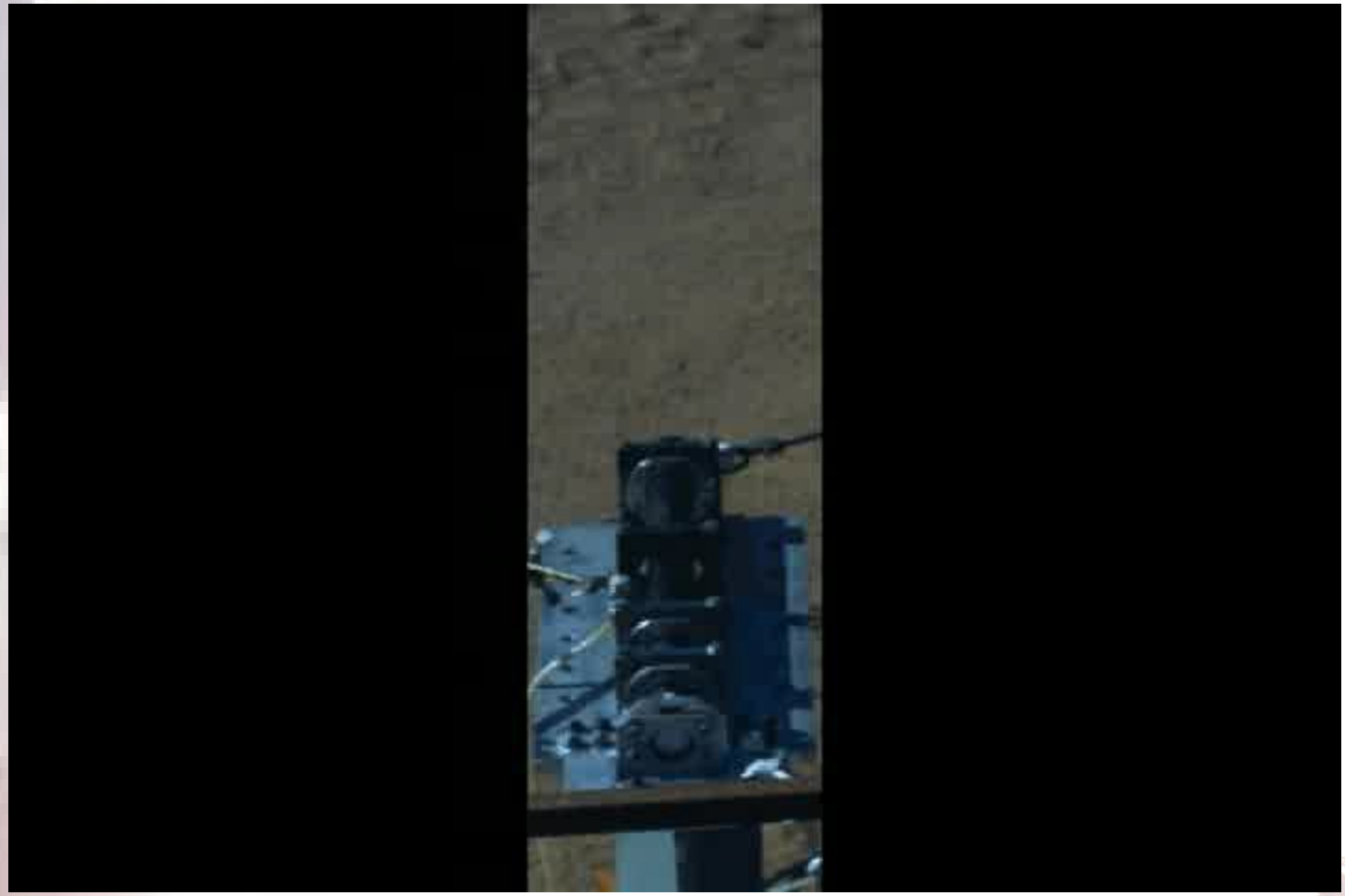


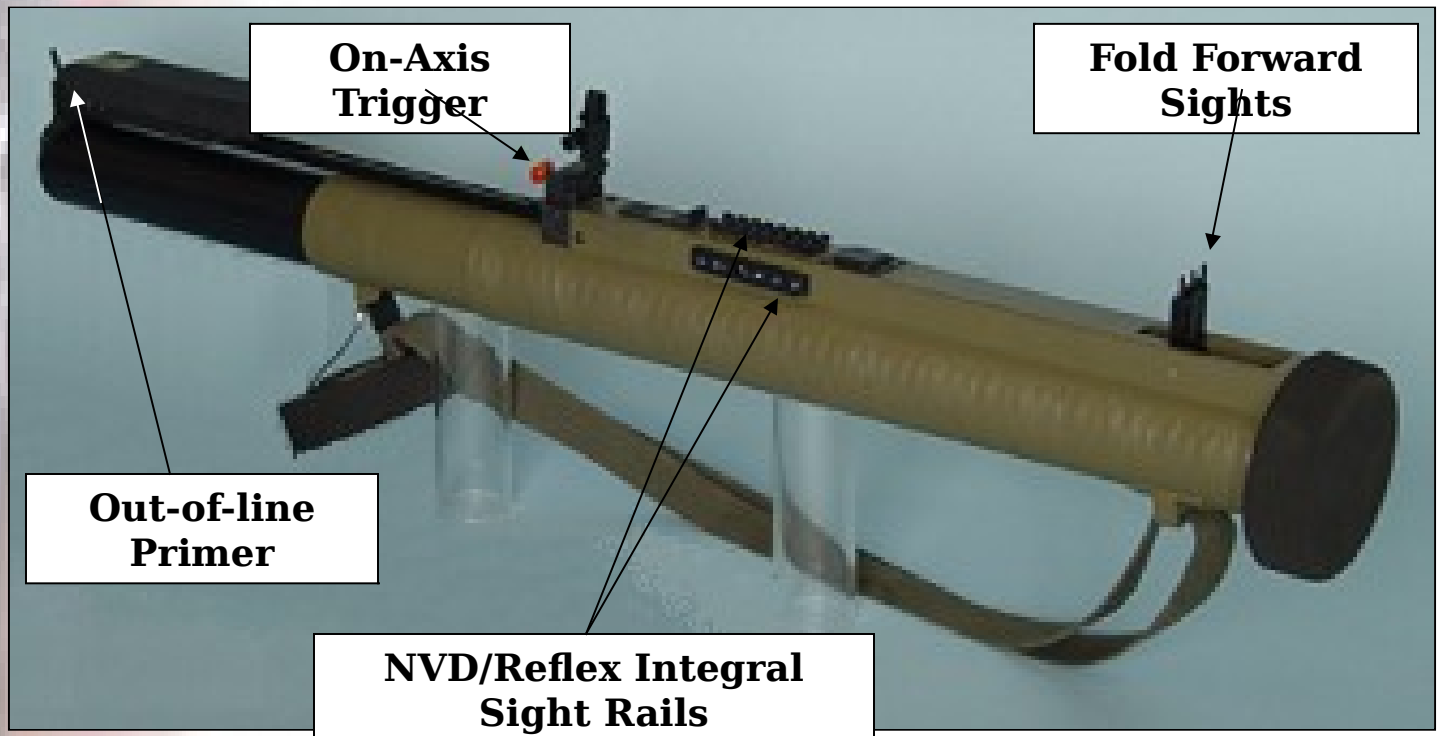
Interior wall after 3 firings at 5 meters and 1 firing at 3 meters

M72E8-FFE Firing



M72E9-DP

- Adds Deep Penetrator (DP) warhead
  - >450mm RHA with enhanced behind armor effects
  - Incorporates dual-safe fuze



M72E10-AP

- Adds Anti-Personnel (AP) warhead
  - Blast/fragmentation warhead
  - Incorporates dual-mode target discriminating fuze
  - Improves launcher human factors
  - Maintains weight < 9.5 lb with rocket motor
- Anti-Personnel warhead
  - Detonates on contact with armor and concrete
    - Large breachs and significant spall
  - Penetrates brick, block, and earth & timber
    - Devastating lethality behind cover

M72E10 vs Brick Structure

Summary

- Benefits of an effective technology strategy
  - Increased versatility to the warfighter
  - Reduced cost and schedule for PIPs
  - Increased program longevity
  - Builds on existing training infrastructure
- M72 LAW program provides example
  - System adapts to new threats and requirements
  - Improvements underway for all subsystems
  - Modular design and multiple Users keep cost low
  - Fielding times < 3 years
  - 40+ year program life to date